

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method of sending a plurality of first signals and a plurality of second signals to a plurality of user equipments, the method comprising:
 - providing a dedicated channel for each one of the plurality of user equipments,
 - assigning a carrier frequency of a set of at least first and second carrier frequencies to each one of the dedicated channels,
 - providing a code-multiplexed shared channel for the plurality of user equipments,
 - sending one of the first signals to one of the plurality of user equipments on the dedicated channel of that user equipment on the assigned carrier frequency by applying a transmit diversity scheme,
 - sending one of the second signals to one of the plurality of user equipments on the code-multiplexed shared channel on a carrier frequency assigned to that user equipment by applying a multi-user diversity scheme.
2. (previously presented): The method of claim 1, wherein the dedicated channels is a DSCH type channels and the code-multiplexed shared channel is a HS-DSCH type channel of a HSDPA type transmission system.
3. (previously presented): The method of claim 1, wherein the sending the one of the first signals and the one of the second signals is performed by means of first and second multi-carrier power amplifiers being coupled to first and second antennas, the first and second multi-carrier amplifiers having at least the first and the second carrier frequencies.

4. (previously presented): The method of claim 1, wherein the set of carrier frequencies having a number of n carrier frequencies.

5. (currently amended): A computer program product having program means for sending a plurality of first signals and a plurality of second signals to a plurality of user equipments, the program means performing the steps of providing a dedicated channel for each one of the plurality of user equipments,

assigning a carrier frequency of a set of at least first and second carrier frequencies to each one of the dedicated channels,

providing a code-multiplexed shared channel for the plurality of user equipments,

sending one of the first signals to one of the plurality of user equipments on the dedicated channel of that user equipment on the assigned carrier frequency by applying a transmit diversity scheme,

sending one of the second signals to one of the plurality of user equipments on the code-multiplexed shared channel on the carrier frequency being assigned to that user equipment by applying a multi-user diversity scheme.

6. (currently amended): A sender for sending a plurality of first signals and a plurality of second signals to a plurality of user equipments, the sender comprising:

a first component which provides a dedicated channel for each one of the plurality of user equipments,

a second component which assigns a carrier frequency of a set of at least first and second carrier frequencies to each one of the dedicated channels,

a third component which provides a code-multiplexed shared channel for the plurality of user equipments,

a fourth component which sends one of the first signals to one of the plurality of user equipments on the dedicated channel of that user equipment on the assigned carrier frequency by applying a transmit diversity scheme,

a fifth component which sends one of the second signals to one of the plurality of user equipments on the code-multiplexed shared channel on the carrier frequency being assigned to that user equipment by applying a multi-user diversity scheme.

7. (previously presented): The sender of claim 6 further comprising scheduler which provides the multi-user diversity for the code-multiplexed shared channel for sending of one of the second signals only when a constructive channel fade is detected.

8. (previously presented): The sender of claim 6, wherein the fourth component which sends the one of the first signals and the fifth component which sends the one of the second signals are provided by first and second multi-carrier amplifier components being coupled to first and second antenna components, the first and second multi-carrier amplifiers having at least the first and the second frequencies.

9. (previously presented): The sender of claim 6, wherein the set of carrier frequencies having a number of n carrier frequencies.

10. (currently amended): A mobile cellular telecommunication system for sending a plurality of first signals and a plurality of second signals to a plurality of user equipments within a cell, the telecommunication system comprising:

a first component which provides a dedicated channel for each one of the plurality of user equipments,

a second component which assigns a carrier frequency of a set of at least first and second carrier frequencies to each one of the dedicated channels,

a third component which provides a code-multiplexed shared channel for the plurality of user equipments,

a fourth component which sends one of the first signals to one of the plurality of user equipments on the dedicated channel of that user equipment on the assigned carrier frequency by applying a transmit diversity scheme,

a fifth component which sends one of the second signals to one of the plurality of user equipments on the code-multiplexed shared channel on the carrier frequency being assigned to that user equipment by applying a multi-user diversity scheme.

11. (previously presented): The method of claim 1, wherein the each one of the plurality of user equipments is assigned to the first carrier frequencies or the second carrier frequencies.

12. (previously presented): The method of claim 1, wherein the each one of the plurality of user equipments are split into a first group of user equipments and a second group of user equipments.

13. (previously presented) The method of claim 12, wherein the first group of user equipments are assigned to the first carrier frequencies and the second group of user equipments are assigned to the second frequencies.

14. (new): The method according to claim 1, wherein the each one of the plurality of user equipments is assigned to a first transmission carrier frequency or a second transmission frequency.

15. (new): The method according to claim 14, wherein the plurality of user equipments are assigned to the first transmission carrier frequency or the second transmission frequency in an alternating way, wherein when a user equipment among the plurality of user equipments becomes active the first carrier frequency is assigned to the user equipment, and when a next user equipment among the plurality of user equipments becomes active the second carrier frequency is assigned to the next user equipment.

16. (new): The method according to claim 14, wherein the plurality of user equipments are assigned to the first transmission carrier frequency or the second transmission frequency in order to balance load of the power amplifiers.

17. (new): The method of claim 1, wherein the plurality of first signals correspond to real-time signals and the plurality of second signals correspond to non-real time signals.

18. (new): The method of claim 14 , wherein the assignment of the plurality of user equipments to the first and second transmission frequencies is dynamic.

19. (new): The method of claim 12, wherein one of the second signals sent to the first group of user equipments are amplified by a first multi-carrier power amplifier and one of the second signals sent to the first group of user equipments are amplified by a second multi-carrier power amplifier.

20. (new): The method of claim 1, further comprising:

scheduling of the second signals to be sent over the code-multiplexed shared channel in order to provide multi-user diversity by scheduling only the plurality of second signals to the user equipments in constructive fades,

whereby first and second power amplifiers are used for sending of the plurality of first signals and the plurality of second signals, and scheduling of the second plurality of signals is performed such that usage of the first and second power amplifiers is statistically balanced.